

WHAT IS CLAIMED IS:

1. An image reading device comprising:

a photoelectric conversion element having a photosensitive thin-film transistor and a capacitor connected to a drain electrode of the photosensitive thin-film transistor;

photoelectric conversion amount detecting means for detecting an amount of charge stored in the capacitor that varies according to intensity of light projected on the photosensitive thin-film transistor; and

control means for reversing the polarity of the stored charge in the capacitor with respect to a potential of a source electrode of the photosensitive thin-film transistor.

2. The image reading device as set forth in claim 1, wherein the control means reverses the polarity of the stored charge in the capacitor every image reading cycle or every multiple image reading cycles.

3. The image reading device as set forth in claim 1, wherein the photoelectric conversion amount detecting means includes a charge integration amplifier that detects charges of both positive and negative polarities.

4. The image reading device as set forth in claim 1,

wherein the photoelectric conversion amount detecting means includes a charge integration amplifier that detects a charge of either positive or negative polarity.

5. The image reading device as set forth in claim 1, wherein, in order to reverse the polarity of the stored charge in the capacitor, the control means controls a voltage applied to an electrode of the capacitor opposite an electrode connected to the drain electrode of the photosensitive thin-film transistor.

6. The image reading device as set forth in claim 1, wherein:

the photoelectric conversion amount detecting means includes a charge integration amplifier; and

in order to reverse the polarity of the stored charge in the capacitor, the control means controls a reference voltage of the charge integration amplifier.

7. An image reading device comprising:

a photoelectric conversion element including a photosensitive thin-film transistor and a capacitor connected to a drain electrode of the photosensitive thin-film transistor;

a photoelectric conversion amount detecting section

for detecting an amount of charge stored in the capacitor that varies according to intensity of light projected on the photosensitive thin-film transistor; and

a control section for reversing the polarity of the stored charge in the capacitor with respect to a potential of the source electrode of the photosensitive thin-film transistor.

8. An image reading method comprising:

a first step of charging a predetermined amount of charge to a capacitor connected to a drain electrode of a photosensitive thin-film transistor;

a second step of discharging the predetermined amount of charge from the capacitor by projecting light onto the photosensitive thin-film transistor while the photosensitive thin-film transistor is OFF; and

a third step of detecting an amount of charge stored in the capacitor,

said image reading method reading a document image in a cycle of said first through third steps, and

said image reading method reversing the polarity of the stored charge in the capacitor every cycle or every multiple cycles of said first through third steps with respect to a potential of a source electrode of the photosensitive thin-film transistor.

9. The image reading method as set forth in claim 8, wherein said third step is carried out every cycle using a charge integration amplifier that detects charges of both positive and negative polarities.

10. The image reading method as set forth in claim 8, wherein said third step is carried out every other cycle using a charge integration amplifier that detects a charge of either positive or negative polarity.

11. The image reading method as set forth in claim 8, wherein said third step is carried out using a charge integration amplifier that detects a charge of either positive or negative polarity, only when the polarity of the stored charge in the capacitor is a polarity detectable by the charge integration amplifier.

12. The image reading method as set forth in claim 8, wherein the polarity of the stored charge in the capacitor is reversed by controlling a voltage applied to an electrode of the capacitor opposite an electrode connected to the drain electrode of the photosensitive thin-film transistor.

13. The image reading method as set forth in claim 8, wherein the polarity of the stored charge in the capacitor

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is reversed by controlling a reference potential of a charge integration amplifier used in said third step.